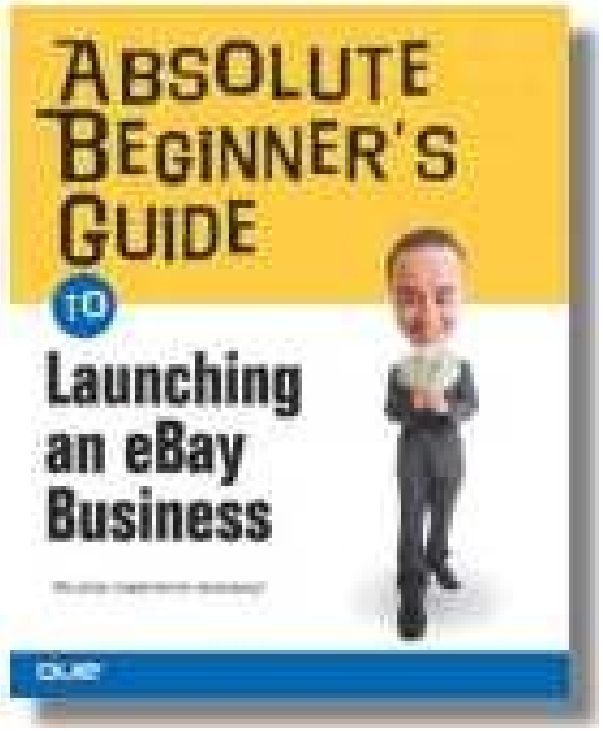
- Technical Evaluation Training

Why Do you need Training?

- You are good at what you do.
- We are asking you to do something different than what you have learned.
- Changing Environment
- Turnover in personnel

Business Environment



- Contractor is in Business
- Business Environment
- DoD Business
- IPT Environment
- You will be a part of Negotiations

DoD Business

- DoD Business
- Buyer & Seller
- As a consumer we Buy.
- As employees we sell our services to employer.
- Every DoD Contractor is buyer and seller

Market Place

- Buyer
- Seller

- Buyer expects Low Price (Gov’t)
- Seller expects High Price (Contractor).
- Competitive Market
- Sole Source Market

Competitive & Non Competitive

- Competitive Market
- Many buyers and Many sellers .

- Non Competitive Market
- Negotiation to establish Fair and Reasonable price.
- We may select a one contractor from many contractors. Selected contractor becomes sole source as we award follow-on contracts.

DoD Contractors

- Seller
- DoD Contractors are in business for profit
- Corporations are to maximize profit for shareholders.
- Profit is a difference between price and cost.
- Profit can be increased two ways
  - 1. Increase price to buyer
  - 2. Reduce cost to seller.

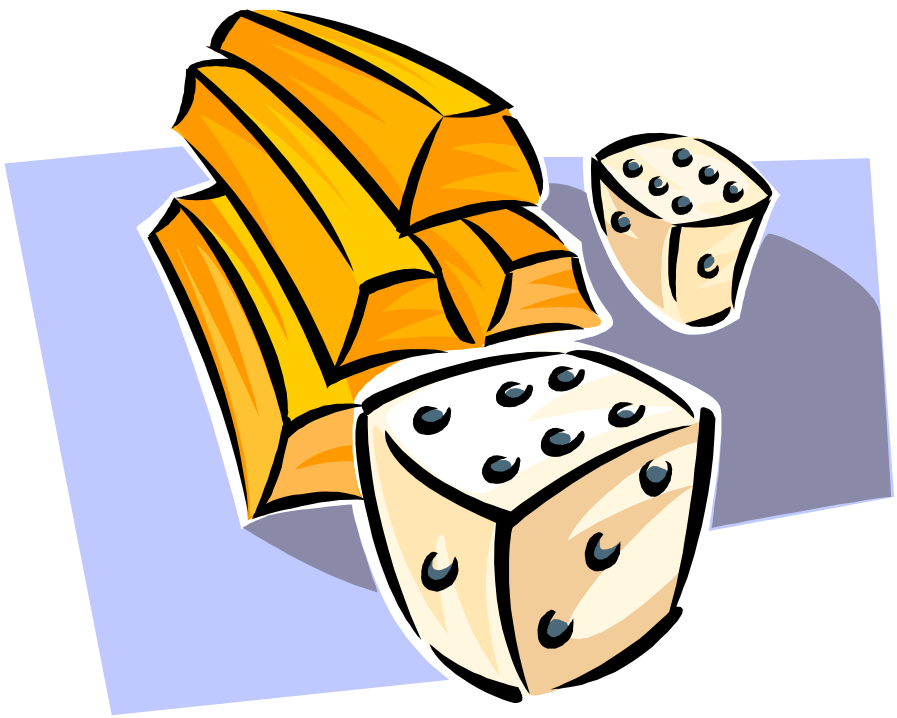
Government as a Buyer

- Buyer
- War fighter needs goods and services
- Our ability to acquire these services and goods is affected by limited budget and price we pay is what Gov’t buys.
- We can buy more by either increasing budget or decreasing price.

Government Regulations

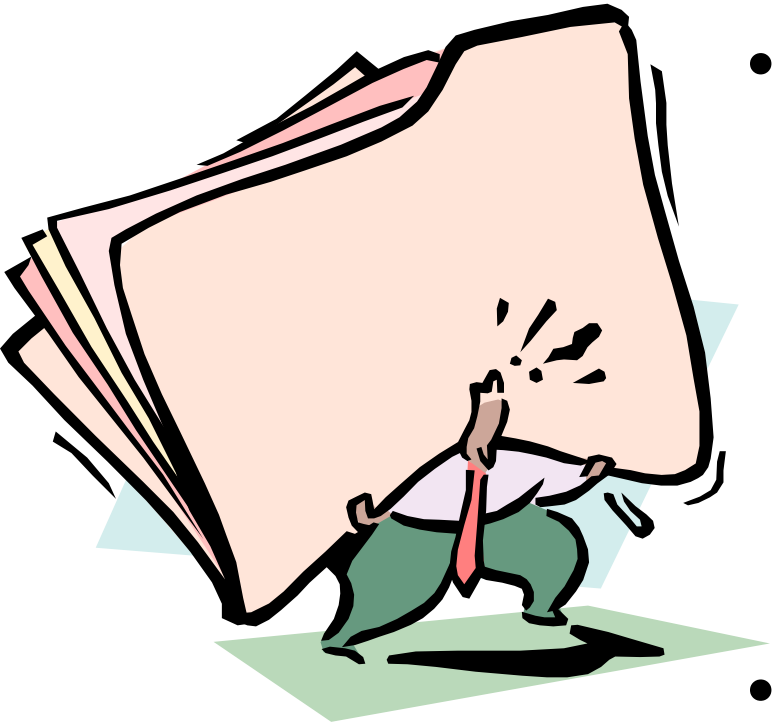
- Gov’t Regulations are stipulated by FAR
- Gov’t has established regulations to ensure it acts as prudent buyer with the Taxpayer’s money.
- Profitless benchmark
- Protect buyer and seller.

Why Tech Evaluations?



- Competitive Market Place needs No Tech Eval
- Sole Source needs Tech Eval

Government Pricing Policy



- FAR 15.4
- Contracting Officer must purchase supplies and services from responsible source at Fair and Reasonable Price. http://farsite.hill.af.mil/vffara.htm
- This is the basis for all other pricing related regulations and policies.

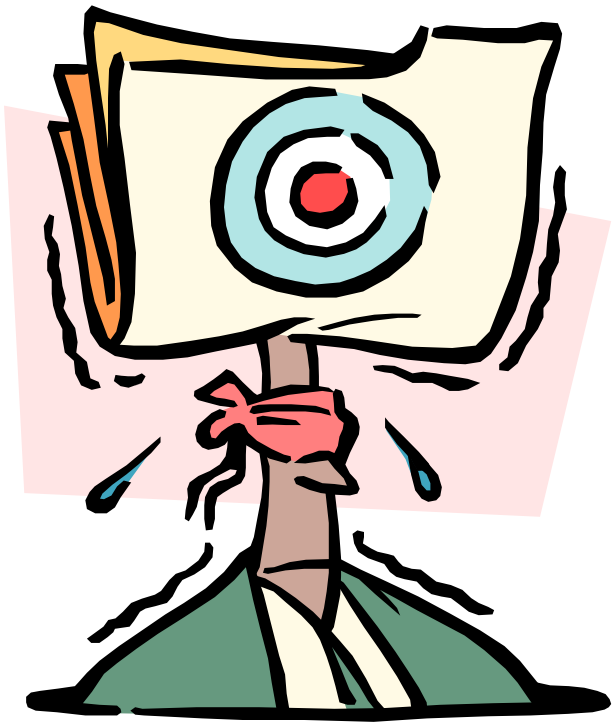
Acquisition Process in IPT

• Requirement Need	• Govt
• Specification/Study	• Govt & Cont
• Statement of Work	• Govt & Cont
• Funding Requirement	• Govt
• Req for Proposal	• Govt issues RFP
• Proposal Submission	• Govt & Cont
• Proposal Evaluation	• Govt & Cont
• Business Clearance	• Govt
• Negotiation	• Govt & Cont
• Contract Award	• Authority to Proceed
• Delivery of Items	• Mission accomplished

Negotiations

- Neg are not Business as Usual
- Relationship is Almost Always Adversarial
- Your Counterpart would be usually a Dept Manager or Equal.
- He is usually measured by his ability to meet schedule and budget
- His budget will be set after negotiations and his ability to defend the proposal estimates you are evaluating.

Major Elements at Nego

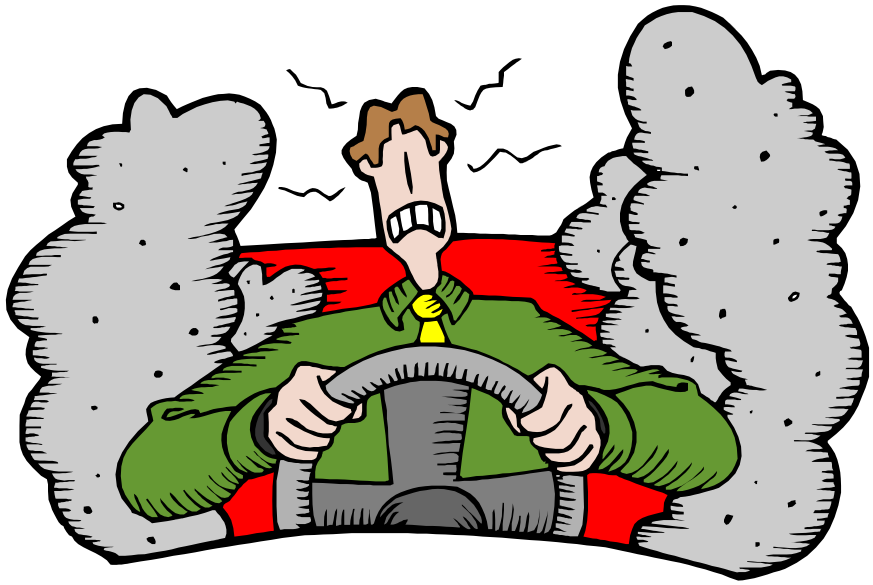


- Inputs
  - Labor Hrs
  - Material Type and Quantity
  - Travel (# of Trips & Indivi, Duration)
- Rates & Costs
  - Labor Rates
  - Indirect Rates
  - Material Cost
- Profit

Role of Tech Eval at Nego

- Tech Eval are usually
  1. Establishes major part of Nego Position excluding rates and factors
  2. Most important part of Negotiations
  3. Most difficult part of Negotiations
  4. Weak link in negotiations

Why Tech Eval are so Difficult?

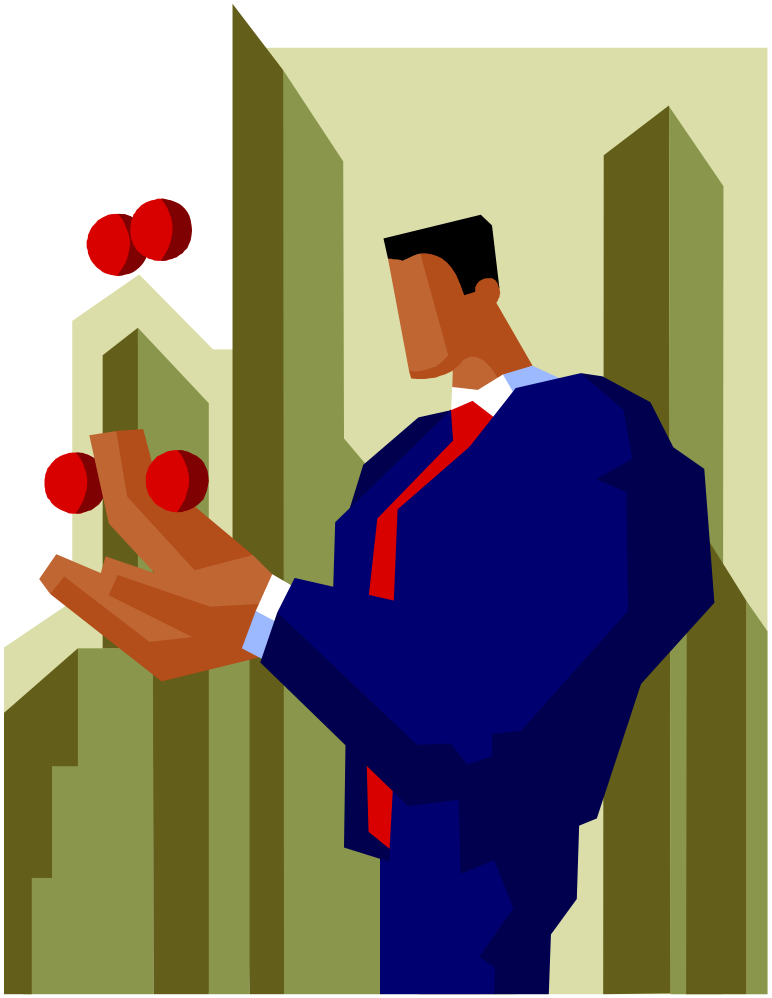


- Inexperienced Evaluators
- Time Constraints
- No Historical Data (e.g. New Program)
- Uncooperative Contractor

Keys to Successful Tech Eval

- Organization
- Preparation
- Communication
- Focus
- Consolidation
- Teamwork

Organization



Preferably use an excel worksheet identifying

- Proposal Task
- WBS
- Labor Hours
- Who is responsible?
- Going in Position (First Offer)
- Objective - Goal

Preparation

- Read & Understand Statement of Work
- Read and Understand the Cost Proposal
  - Structure of the proposal
  - Structure of the contractor’s organization
  - Estimating Approach
  - Format of estimates
- Formulate an Evaluation Plan
  - Prioritize tasks
  - Look for common threats

Communication

- Prepare fact finding questions
- Coordinate with lead Gov’t Buyer
- Be specific - General Q General A
- Don’t accept inadequate contractor answers
- Be aware of issues that may affect other discipline and notify Tech Evaluator Leader
- Notify team leader promptly as problems are identified
- Write Tech Eval in “Plain English”

Focus

- Address Key Issues
- Underlying Technical Eval Question is
  - How Many hours does it take to do this task?
  - How does the system works? or
  - How would it perform?
- Technical Evaluation position must stand up to scrutiny at negotiations.

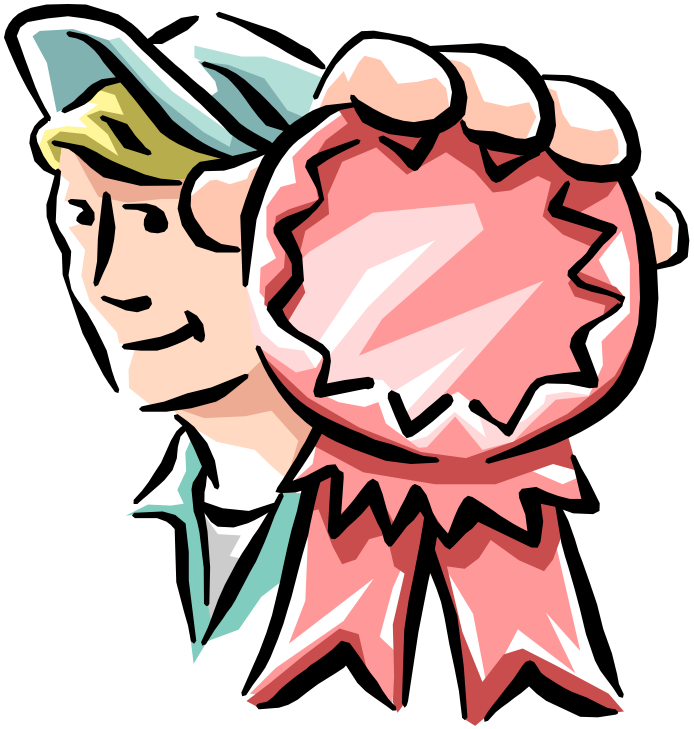
Consolidation

- Tech Eval should be coordinated with buyer.
- Synopsis of each area should be prepared by team leader
  - Unique issues summarized
  - Contractor vs. Air Force (Questions & Response)
- Body of Tech Eval should contain evaluation sheet of all tasks
  - Each task evaluation contain
    - Basis of contractor’s estimates
    - Basis of Air Force objective position
    - Basis of Air Force’s going in position

Sample Task Evaluation sheet (Inadequate)

- Contractor Proposed 1,000 hours
- Government position
  - Going in position:
    - 900 hours based on engineering estimates
  - Gov’t Objective:
    - Accept all hours proposed.

Sample Task Evaluation sheet (Adequate)



- Contractor Proposed
  - 120 hours for attending meetings
  - WBS 1.2456
- Basis of Proposed Hours:
  - Contractor's proposed hours are based on similar program
- Government position
  - Going in position:
    - 0 hours. Contractor employees from this department did not attend any meeting.
  - Gov't Objective:
    - Accept 24 hours. Contractor's proposal for similar program included 4 meeting for 3 individuals total (4X3X8) 96 hours attending meeting and (4X3X2) 24 hours preparation for meeting. We will consider proving 24 hours for three employees to attend one meeting.

Reasons for Poor technical Evaluations

- Not understanding requirements
- Inadequate Proposals
- The evaluator never asked right questions to the contractor during Fact-Finding.
- Lack of adequate review time

Fact Finding

- Assumptions
- Facts
- Judgment

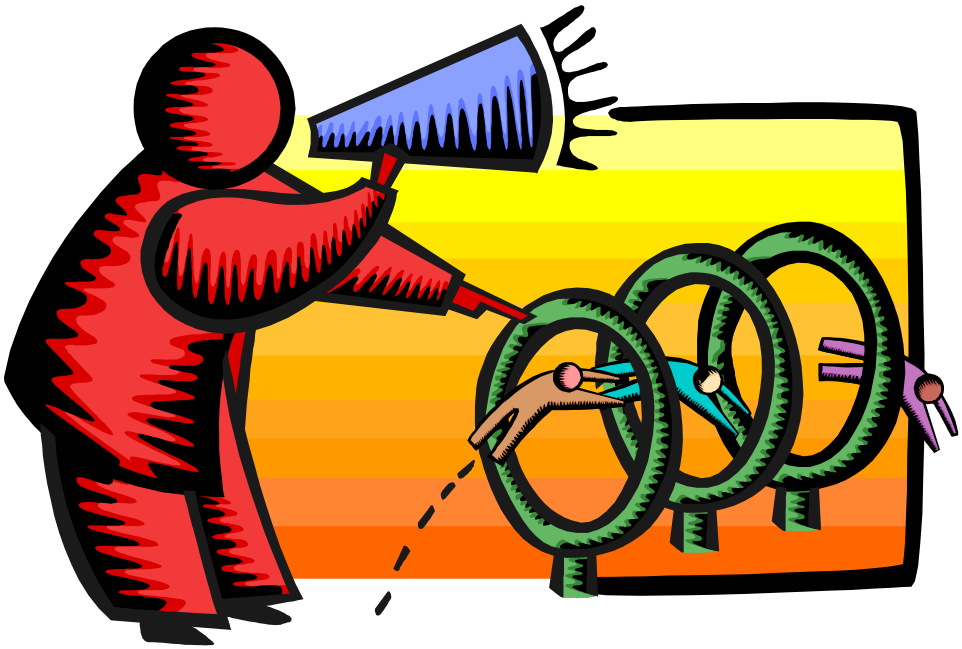
Fact Finding Approach

- It is not fair to the contractor or Gov’t to evaluate a task without knowing the facts behind the estimates.
- The Gov’t has right to know the how and why of each task estimates proposed by the contractor.
- Before you evaluate you must investigate.
- The key element in fact finding is knowing what questions to ask and how to ask them.
- If the right questions are asked and answered the evaluation will be easier and better product will result.

Initial Questions

- Questions to ask yourself:
- Is this a valid task?
- Is Contractor's Estimating Method Valid?
  - Yes - Tech Eval should use same method and explain exception to the contractor's estimate
  - No – Tech Eval should use alternative method
  - Explain alternative method. How and why results were derived and applied.

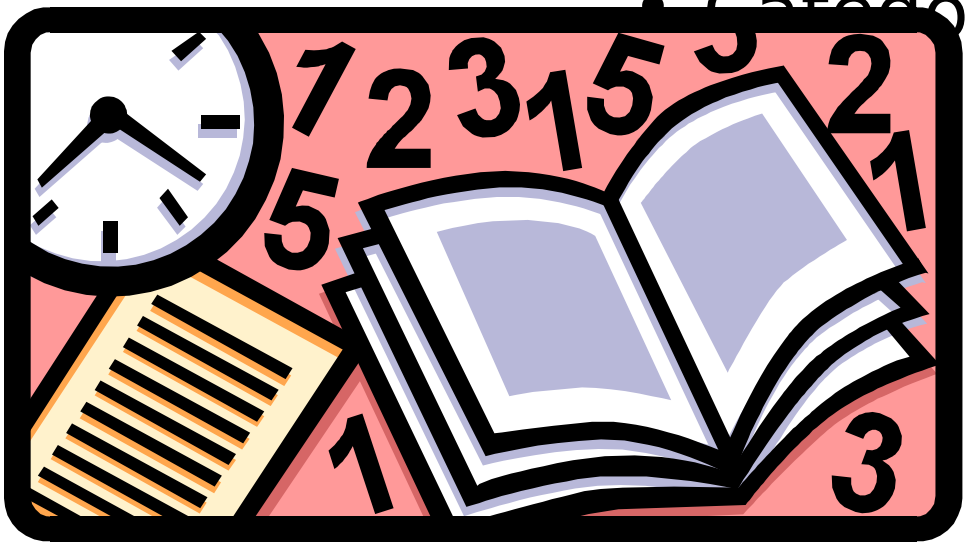
Fact Finding Process



- Info you need to evaluate task:
  - Scope: (How often ? How many? How long?)
  - Quality & Complexity (How precise? How difficult?)
- Virtually every task estimate can be reduced to an equation
  - For example:
  - 3 meeting X 4 hours per meeting (3X4 = 12 Hours)
  - 2 employees for 4 months @ 160 hours a month (2X4X160 = 1,280 hours)

Sample Task Estimate

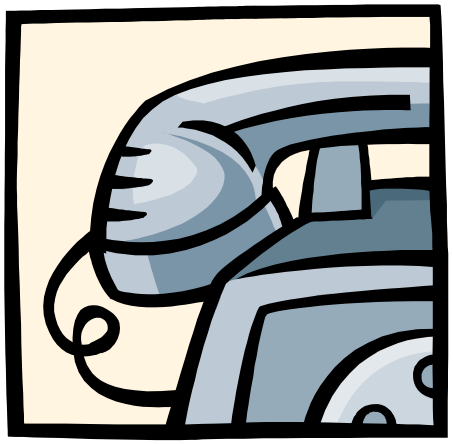
- WBS 1.1.2.4.
- Task Develop software for VTSA
- Estimate 27,875 hours
- Category Sr. Programmer

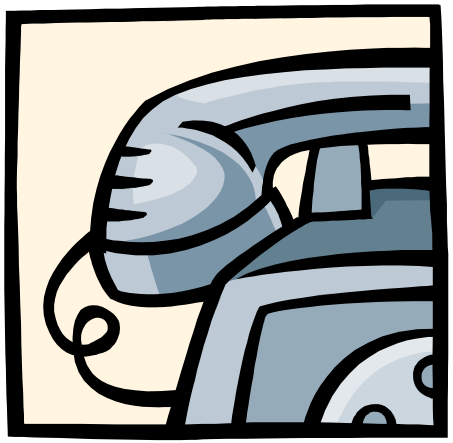


Fact Finding Questions Tree

- Q. How was estimates of 27,875 Hrs Derived?
- A. It was based on 11,150 Line of Codes @2.5 Hrs per line.
- Q. What is the basis for number of lines?
- A. There are 9900 lines in the existing training manual. The new training manual will need 1,250 additional lines to handle the increased capabilities of the New training need.
- Q. Will the existing codes be scraped and replaced by new code?
- A. No. Some existing codes will be maintained but a significant amount of new codes will also be needed.
- Q. How many new vs. modified in 11,150 total lines?
- A. The estimate is based on 7,250 New and 3,900 modified.

Fact Finding Questions Tree Continued





- Q. Did the 2.5 Hrs per line apply to all Lines of Code?
- A. Yes.
- Q. What is the 2.5 Hrs per LOC based on?
- A. It is based on experience from other program.
- Q. What specific Programs were used?
- A. Experience from “Easy Bucks” and “Free Bucks” from follow on program was used.

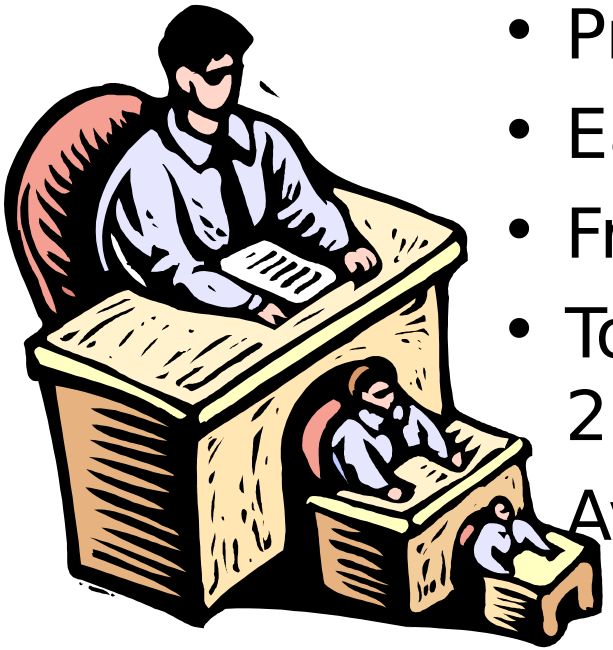
Fact Finding Questions Tree Continued

- Q. Please provide the data from those programs that support 2.5 Hrs per line?
- A.
- Programs LOC Hours AvgHrs
- Easy Bucks 50,000 134,500
- Free Bucks 12,000 21,000
- Total 62,000 155,000 2.5 Hrs.
- Average 155,000/62,000 = 2.5 Hrs.

Fact Finding Questions Tree Continued

- Q. Please provide the data from those programs that support 2.5 Hrs per line?
- A.
- Programs LOC Hours AvgHrs
- Easy Bucks 50,000 134,500 2.68
- Free Bucks 12,000 21,000 1.75
- Total 62,000 155,000 2.50 Hrs.

Average 155,000/62,000 = 2.5 Hrs.



Fact Finding Smarter

- We can spend weeks and months getting to the bottom of each estimates. We must work smarter and faster.
- We need to educate the contractor as to what is considered an adequate support for an estimate before we get the proposal.
- We need to ask the right questions right away.

Tech Eval Tips Understanding Aver

- Use of an Average sounds reasonable but may Not be.
- Examine the Data that Average was based on:
  - Is Data consistent with proposed effort “Apple to Apple”
  - Is data accurate and complete
  - Is there a wide variation in Data point
  - What does most Current Trend show?
- We are concerned with Cost of our specific effort not average.

Tech Eval Tips Understanding Metrics

- Contractor use of various styles of Cost Estimating Relationship (CER)
- E.G.
- Hours per lot,
- Qualities of various Estimates / CERs:
  - Logical cause & Estimate
  - Historical Data
  - Hours for code
  - Proven Reliability (Actuals vs. Estimates)
  - Number of Lines

Tech Eval Tips Understanding Metrics

- Old Metrics (We have been Using These for Years)
  - Things change, Are they still valid?
- New Metrics (We developed these just for your program)
  - Based on what? Can they be verified?
- Adjusted Metrics (This job is much tougher)
  - Is it really? Examine jobs that generated unadjusted metrics.
- Non metrics Task Bids separately
  - Actuals that produced metric may have included some task that does not have any relationship to our program

Tech Eval Tips Manpower Analysis

- Test for Reasonableness
- Sometimes the sum of the parts is greater than the whole some.
  - Example: XYZ Program, 12 months Period of Performance.
  - 3,000 proposed hours per month / 150 Hours per month = 20 work Months
- Ask yourself. Can I really estimate 20 employees.
- The contractor has only 15 employees on board and does not plan to hire any additional employees.

Tech Eval Tips Manpower Skill Mix Analysis

- Be aware of contractor bidding higher skill level than are needed to do the job.
  - Just because they proposed senior people doesn't mean they will use senior people. They can use whoever they choose to perform the contract.
- Questions to Ask:
  - How does proposed skill mix compare with plant wide skill mix?
  - Is it Top Heavy Why?
  - Is this effort more complex than most other work in the plant?
  - Does the contractor have historical data? If not why?

Tech Eval Tips Manloaded Estimates

- Man loaded estimates are very common and usually poorly supported.
- Be aware of motherhood type of language such as monitor, coordinator, interface support.
- Ask Questions: What do you mean by those terms “Monitor, Coordinator”?
- Don’t fall for the “it is Not the real a Full time task but I can’t hire a half person” Argument.
- Maintaining workforce (Critical skill).
- Try to make the contractor be specific.
  - For example: “This task is for problem resolution”

Tech Eval Tips Judgmental Estimates

- All Estimates have some judgment.
- “Professional Judgment” is Not in itself an adequate basis of estimates.
- Make the contractor fully explain how Judgment resulted in the house proposed estimates
- What assumptions are inherent in the estimates

Tech Eval Tips Unsupported Estimates

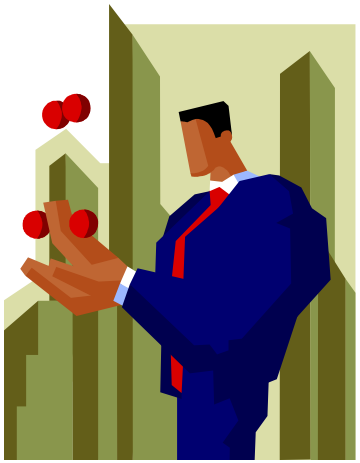
- Contractor has failed to provide any support for a basis of their estimates:
  - The “Going in position” should be substantially lower (or Zero) for any tasks not supported by the contractor during fact finding.
- For the Objective position only Zero out a task
  - It is not a valid task
  - It is duplicated by another task bid elsewhere in the proposal

Developing AF Going in Position

- Mental Approach:
  - What should it take to do this task assuming things go as smooth as possible.
- Not a make believe “Everything is Perfect” position, but a real world best case scenario.
- Benefit of the doubt – to the Gov’t

Developing AF Objective Position

- Mental Approach:
  - What should it take to do this task assuming normal problems develop.
- Not a total disaster situation, but a real world likely to happen scenario.
- Benefit of the doubt – to the Contractor



IPT Tech Eval – Are They Working?

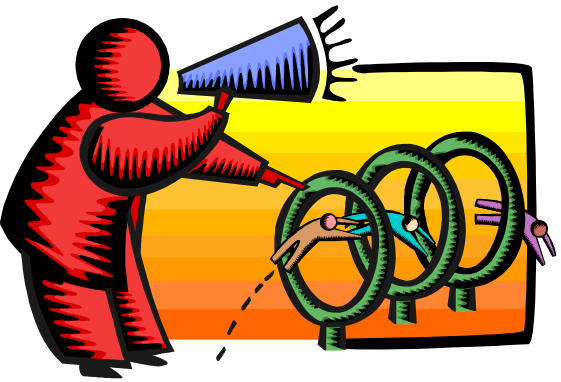
- The Good:
  - IPT has worked well on cost type contracts CPFF, CPAF
  - Minimum cost risk to the contractor
- The Bad:
- Some IPT negotiations have taken longer than the traditional method
- The Ugly:
- Some IPT Negotiations have been simply a “Spend the Budget” process

IPT Tech Eval – Common Misconceptions

- All Hours should be Agreed during IPT:
- Not necessarily
- For instance, if a Forward Pricing Rate Agreement between the contractor and the Gov’t is not in effect total agreement on hours may only delay settlement on total price. It will be better to leave “Negotiation Room”.
- This will also be true if Profit/Fee % is expected to be contingent.

IPT Tech Eval – Common Misconceptions

- A proposal that is within the program budget is Fair and Reasonable
  - Not necessarily
- The effort (Cost) needed to meet the contract requirement determines what a Fair and reasonable price should be. This could be well below or above the program budget
  - The contractor will often suggest De-scoping
- Requirement to fit Budget versus reducing his estimates
  - It is part of our job to make sure we are not paying more than we should for the products we buy.



IPT Proposal Steps

- Convert SOW to lower level tasks to be estimated
  - Gov’t & Contractor
- Identify Estimating Technique to be used
  - Gov’t & Contractor
- Identify Key Estimating Parameters:
- E.g. Number of Drawings, Lines of Codes
  - Gov’t & Contractor
- Basis of Estimates: Hours & Rationale
  - Contractor
- Evaluations: Government
- Complete understanding of Gov’t/Kr position on hours
  - Gov’t & Contractor
- Total Agreement on hours may or may not be objective but there seems to be support in Proposal/Negotiation

IPT Tech Eval Preparation

- Planning and preparation are even more important in one pass at earliest possible stage. Gov't Tech Team leader should began to gather data
- Become familiarize with contractor organization structure and estimating system
- Is this effort similar to a previous action?
  - Review Task structure in the proposal
  - Review estimating technique used
  - Review results of prior negotiations
  - Get out the Action item list (Agenda)
- Will this effort be concurrent with other effort?
  - Sharing the support for common tasks
  - Select common tasks to be reviewed
- Communicate the basis of estimates requirements to the contractor

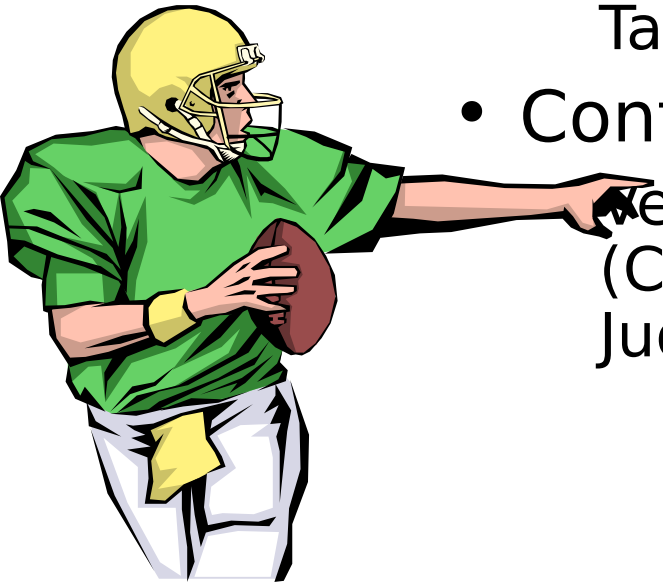
IPT Estimates Key Ingredients

For each Task Ask

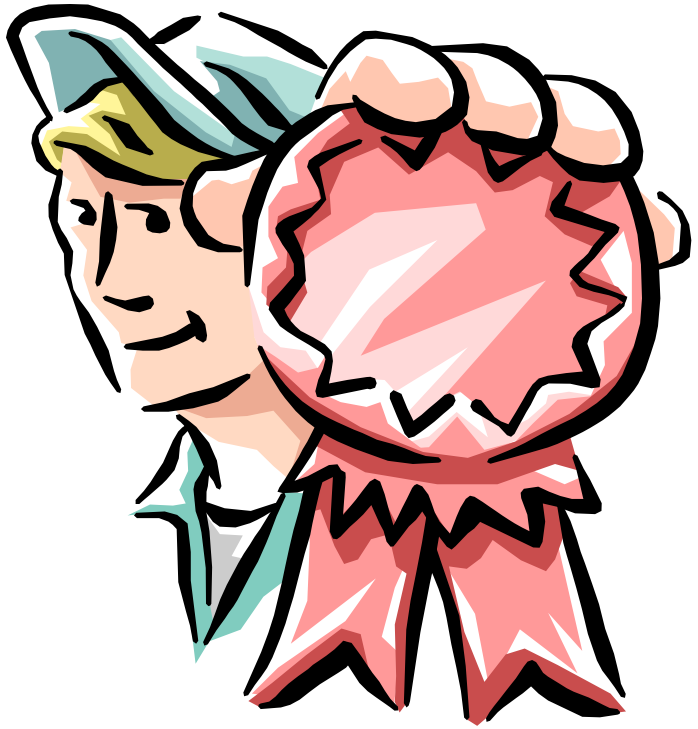
- Who?
- Functional Group (e.g. Sys Eng, IS etc.)
- What?
- What task needs to be done?
- When?
- When it needs to be done
- How Many?
- Why?

IPT Keys to Success

- Empowerment of Contractor Team Members
  - Ability to reduce estimates without senior management approval
- Diligence Government Tech Team
  - Prepared, Focused, and Dedicated to reach Fair and Reasonable position on Tasks.
- Contractor’s estimating System
  - Verifiable Cost Estimating Relationship (CER), Metrics versus Engineering Judgments



Congratulations



- Thank you for your time
- Good luck In your tech evaluation assignment
- Any Questions?